Sector Competitiveness Frameworks

Environment Industry Highlights

Industry Sector Environmental Affairs — Secteur de l'industrie Affaires environnementales

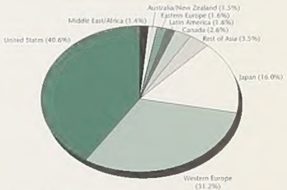
Canada

HIGHLIGHTS

The Canadian environment industry is composed of firms involved in two broad types of activities: provision of environmental services and production of environmental products. Firms in this industry provide a wide range of pollution prevention and environmental conservation, remediation and enhancement technologies, processes, products and services.

- The world environment industry is evolving. It has only recently come to be regarded as a distinct industry and is still actively engaged in developing new markets and searching for new ways to deliver its services.
- Although estimates vary, one research group (The Delphi Group) puts the value of the global environmental market by the turn of the century at $1 trillion.
- In 1994, Canada accounted for an estimated 2.6 percent of global spending on environmental goods and services. Member countries of the Organisation for Economic Co-operation and Development (OECD) represent approximately 80 percent of the world market. Developing countries, however, are becoming an increasingly important source of demand as their industrial sectors come under growing pressure to develop in a more sustainable fashion.

Global Environmental Market, 1994



Source: "The Global Environmental Market," *Environmental Business Journal*, August 1995, p. 3.

The Canadian environment sector consists primarily of small enterprises . . .

- Preliminary data from Statistics Canada indicate that 123 000 workers produced environmental goods and services valued at $15.6 billion in 1995. The business sector accounted for just over half of the goods and services produced, with output of $9.3 billion and employment of 58 250 workers. The remaining $6.3 billion in services provided were attributable to business and government activities to meet their own needs.

Supply by Industry and Sector, 1995

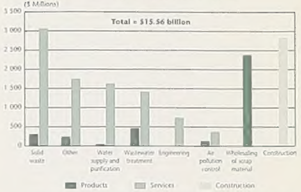
	Business sales	Business own account	Government	Total domestic production	Imports	Total supply
			($ millions)			
Producers of equipment and materials	3 673	—	—	3 673	1 188	4 861
Air pollution control	165	—	—	165	914	1 079
Water supply and purification	59	—	—	59	11	70
Wastewater treatment	473	—	—	473	83	556
Solid waste	323	—	—	323	25	348
Other goods	253	—	—	253	155	408
Wholesaling of scrap materials	2 400	—	—	2 400	—	2 400
Services	3 788	1 252	4 025	9 057	—	9 057
Air pollution control	53	306	—	359	—	359
Water supply and purification	82	—	1 559	1 641	—	1 641
Wastewater treatment	228	325	878	1 430	—	1 430
Solid waste management	2 125	536	415	3 077	—	3 077
Engineering	750	8	—	758	—	758
Other services	550	240	966	1 755	—	1 755
Construction	1 795	150	911	2 848	—	2 848
Total	9 227	1 406	4 937	15 560	1 188	16 748*

* This is a minimum estimate of the size of the environment industry.

Source: Statistics Canada, National Accounts and Environment Division, *Environment Industry: 1995, Preliminary Data*, Item 16F0007XPE, Ottawa, June 1997. (Effective February 1998, the National Accounts and Environment Division has become the Environment Statistics Program.)

- The Canadian environment industry consists of some 4 000 firms ranging from one-person operations to large, multinational corporations. The majority of firms employ fewer than 50 people. Approximately two thirds of the firms provide environmental services, the remaining third are manufacturers of a broad range of products.
- Important subsectors of the industry include waste management, water supply and purification and wastewater treatment.

Total Domestic Production, 1995



Source: Statistics Canada, National Accounts and Environment Division, *Environment Industry: 1995, Preliminary Data*, Item 16F0007XPE, Ottawa, June 1997. (Effective February 1998, the National Accounts and Environment Division has become the Environment Statistics Program.)

- Canadian firms have gained international recognition for their expertise in developing water and wastewater treatment technologies, handling liquid and solid wastes, manufacturing environmental equipment such as shredders, as well as for their environmental engineering and consulting expertise.

The Canadian environment industry is in transition . . .

- Those segments of the industry that are becoming mature are undergoing a process of rationalization and consolidation. Many small firms are being taken over or merged to form larger entities better able to compete internationally.

The forces driving the demand for environmental products are also undergoing change . . .

- Governments are shifting their focus from pollution management to pollution prevention. At the same time, governments are supplementing regulation with negotiations to secure voluntary agreements from industry to limit releases of toxics and eliminate polluting activities. There is an increasing emphasis on re-engineering industrial processes to reduce the amount of pollution produced at source, rather than at the end-of-pipe. These cleaner production technologies and services, which enable firms to improve their resource use efficiency while eliminating the production and release of toxics, are critical to sustainable development.
- Increasing pressure on industry to demonstrate its commitment to sustainable development presents challenges for industry and growth opportunities for the evolving environment industry. On December 10, 1997, Industry Minister John Manley tabled Industry Canada's *Sustainable Development Strategy* (**http://strategis.ic.gc.ca/sd**) in the House

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Sector Competitiveness Frameworks are a new series of documents produced by Industry Canada in collaboration with Canada's key industry stakeholders. Each framework will examine a major Canadian industry sector, and will be prepared in two volumes. *Part 1 — Overview and Prospects* focusses on the opportunities, both domestic and international, as well as on the challenges facing industry sectors in Canada. *Part 2 — Framework for Action* will be based on discussions with major industrial stakeholders, following study and review of the *Overview and Prospects*.

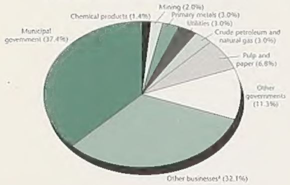
The objective of the **Sector Competitiveness Frameworks** series is to seek ways in which government and private industry together can strengthen Canada's competitiveness and, in doing so, generate jobs and growth.

In all, some 30 industrial sectors will be analyzed. Electronic copies of documents in the series are available on the Internet at the following address: http://strategis.ic.gc.ca/scf

of Commons. On this same date in Kyoto, Japan, the Kyoto Protocol (**http://www.unfccc.de**) was adopted by the Conference of Parties to the United Nations Framework Convention on Climate Change (1992). Under the Kyoto Protocol, Canada would be required to reduce greenhouse gas emissions to 6 percent below its 1990 levels by the commitment period from 2008 to 2012.

- With the increased global focus on climate change and the impacts of fossil fuel use, there is greater demand for technologies and services that reduce energy use and/or facilitate use of less carbon-intensive sources of energy.
- There is increasing interest by municipalities in transferring environmental activities to the private sector. Public-private partnerships have already been used for the development and operation of some local environmental infrastructure. Canadian firms, however, have some challenges to overcome in competing for this business.

Canadian Environmental Market, 1995



* Includes other manufacturing industries, waste management industry, food industry, beverage industry and non-metallic mineral industry.

Source: Industry Canada based on data provided by Statistics Canada, National Accounts and Environment Division. (Effective February 1998, the National Accounts and Environment Division has become the Environment Statistics Program.)

While there are areas of strong demand within the domestic markets, export markets hold the best opportunities for the long-term growth of the industry . . .

- The United States is Canada's major export market. Since the implementation of the North American Free Trade Agreement (NAFTA) in 1994, Mexico has also become an important market for Canadian environmental products. Canadian firms, however, have moved slowly to take advantage of export opportunities. In developing regions such as Latin America and parts of Asia and Africa, where countries are striving to establish an infrastructure to address basic pollution and waste problems, demand for environmental equipment and services is growing rapidly.
- Canadian firms are well positioned to satisfy many of the basic product and service delivery needs of developing economies. The Canadian industry may also be able to participate in major infrastructure developments, if firms can successfully partner with others, including foreign producers, and acquire the critical mass and resources necessary to compete effectively in these lucrative markets.

THE BOTTOM LINE

- The following major challenges need to be addressed by industry and government working together.

Trade

- Canadian environmental firms should explore the possibilities for using their competitive strengths to further develop specialty or niche products, services and technologies. They also need to examine partnering arrangements with other companies, including foreign firms, that may facilitate their penetration of new domestic and export markets.

Investment/Financing

- The industry requires significant investment to develop and commercialize new technologies and thereby strengthen its competitiveness. Technology development and commercialization have been impeded by a shortage of seed money and venture capital.
- Through alliances and partnerships, companies could share the risks and the costs of new technology development and acquisition.

Research and Development

- Industry-funded R&D is lower in Canada than in most member countries of the OECD. While this can be partly attributed to the limited resources of the small and medium-sized enterprises (SMEs) that characterize the environment industry, Canadian firms may fall behind technologically if they do not improve on their R&D investment and performance. A related concern arises from evidence indicating a relatively slow adoption of new technologies by Canadian firms. There is a need to look at how Canada can close the R&D innovation/adoption gap with its key competitors.

Human Resources

- The development of an adequate base of qualified workers is a key challenge. Available evidence points to a shortage of technicians qualified and certified to work in the environment industry. Industry must work with colleges and universities to address this problem, and also to ensure that continuing education courses provide existing workers with an adequate opportunity to upgrade their skills.
- By addressing the above challenges, capitalizing on its competitive advantages and strategically responding to emerging opportunities, the Canadian environment industry can more effectively position itself to benefit from the strong growth in the global demand for environmental technologies, products and services.

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